



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,575	07/25/2003	Sigeo Homma	81940.0050	2969
26021	7590	10/27/2005	EXAMINER	
HOGAN & HARTSON L.L.P.			BRADLEY, MATTHEW A	
500 S. GRAND AVENUE				
SUITE 1900			ART UNIT	PAPER NUMBER
LOS ANGELES, CA 90071-2611			2187	

DATE MAILED: 10/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/627,575	HOMMA ET AL.	
	Examiner	Art Unit	
	Matthew Bradley	2187	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 25 July 2003.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-52 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-52 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 25 July 2003 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>7/25/03 12/13/04</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 13 December 2004 was filed after the mailing date of 25 July 2003 for application 10/627,575. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the Examiner is considering the information disclosure statement with a signed and initialed copy being attached hereto.

The information disclosure statement (IDS) submitted on 13 December 2004 was filed after the mailing date of 13 December 2004 for application 10/627,575. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the Examiner is considering the information disclosure statement with a signed and initialed copy being attached hereto.

Specification

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)),

and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a).
"Microfiche Appendices" were accepted by the Office until March 1, 2001.)

(f) BACKGROUND OF THE INVENTION.

- (1) Field of the Invention.
- (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(g) BRIEF SUMMARY OF THE INVENTION.

(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(i) DETAILED DESCRIPTION OF THE INVENTION.

(j) CLAIM OR CLAIMS (commencing on a separate sheet).

(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7,8, 10, 11, 31, 32, 46, and 47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner notes that the claims noted *supra*, recite, “copy the data from the first storage region to a region in the second storage region where data is not copied from the first storage region.” The Examiner is unsure of how applicants’ intend this claim to be interpreted. The language is unclear and is provoking more then one broad but reasonable interpretation based on the language that data is being copied, but is also not being copied. For examination purposes, however, the Examiner is interpreting the claim to read that data as a whole is being copied over, but certain data within the data set that is being copied over is omitted.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-52 are rejected under 35 U.S.C. 102(b) as being anticipated by Micka et al. (U.S. 6,189,079).

As per independent claim 1, Micka et al (hereafter referred to as Micka) teach,

- a storage region; (Column 4 lines 5-26) (also see Figure 1)
- and a control unit that operates in response to a first command that correlates a first storage region in the storage region to a second storage region in the storage region, (Column 8 lines 6-26) *The Examiner notes that the system as taught by Micka receives a request from the host computer to copy tracks from the first (primary) area to the second*

(secondary) area. The request indicates which tracks are to be copied in the operation. Accordingly, the request correlates the operation between the primary and secondary areas by indicating which tracks are to be copied.

- and allows in response to a read instruction to read data in the second storage region copying of the data from the first storage region to the second storage region, (Column 8 lines 31-34)
- and a second command that dissolves the correlation between the first storage region and the second storage region. (Column 8 lines 41-47).

As per dependent claim 2, Micka teach, when controlling the copying of data, the control unit reads data from the first storage region, outputs the data read to the computer, and then writes the data read to the second storage region. (Column 8 lines 22-26). *The Examiner notes that the controller generates a message indicating the tracks that are involved in the copy operation. This generation of the message occurs after receiving the initial request to copy data but before the data is actually copied as is claimed instantly.*

As per dependent claim 3, Micka teach, when there is data copied from the first storage region to the second storage region, the control unit invalidates the data in response to the first command. (Column 8 lines 41-47).

As per dependent claim 4, Micka teach, wherein the first command is a command that allows copying of data from the first storage region to the second storage

region in response to a write instruction to the second storage region. (Column 8 lines 9-13).

As per dependent claim 5, Micka teach, wherein the control unit writes data designated by the write instruction on the data copied to the second storage region. (Column 8 lines 9-15).

As per dependent claim 6, Micka teach, wherein the control unit controls in response to the second command to copy the data designated by the write instruction and written in the second storage region to the first storage region. (Column 8 lines 39-47).

As per dependent claim 7, Micka teach, wherein the control unit controls in response to the second command to copy the data from the first storage region to a region in the second storage region where data is not copied from the first storage region. (Column 6 lines 25-28): *The Examiner notes that Micka teach the practice of marking data extents that are to be copied with a binary one or set to “on”. When the copying of the data takes place, only the data that is marked with a binary one or set to “on” is copied over. Accordingly, data marked as not “on” within the data being copied over from the first region to the second region is not copied over.*

As per dependent claim 8, Micka teach, wherein the control unit controls in response to the second command to copy the data from the first storage region to a region in the second storage region where data is not copied from the first storage region. (Column 6 lines 25-28). *The Examiner notes that Micka teach the practice of marking data extents that are to be copied with a binary one or set to “on”. When the*

copying of the data takes place, only the data that is marked with a binary one or set to “on” is copied over. Accordingly, data marked as not “on” within the data being copied over from the first region to the second region is not copied over.

As per dependent claim 9, Micka teach, wherein the control unit generates in response to the first command management information to manage correlation between the first storage region and the second storage region, and release the management information in response to the second command. (Column 8 lines 17-22).

As per dependent claim 10, Micka teach,

- wherein the control unit includes a control module that is responsive to a third command to control copying data from the first storage region to a region of the second storage region where data is not copied from the first storage region (Column 6 lines 25-28). *The Examiner notes that Micka teach the practice of marking data extents that are to be copied with a binary one or set to “on”. When the copying of the data takes place, only the data that is marked with a binary one or set to “on” is copied over. The practice of including this bit map table indicating which extents are to be copied is requires that an additional command be present to mark the bits that are to be copied. As such, the third command as claimed instantly, is taught by the marking of bits. Accordingly, data marked as not “on” by the third command within the data being copied over from the first region to the second region is not copied over.*

- and dissolving the correlation between the first storage region and the second storage region. (Column 8 lines 41-47).

As per dependent claim 11, Micka teach, wherein the control unit is responsive to the second command and the third command selectively issued from the computer. (Column 6 lines 25-28).

As per independent claim 12, Micka teach,

- a storage region; (Column 4 lines 5-26) (also see Figure 1)
- and a control unit that operates in response to a first command that causes a first storage region within the storage region to be correlated to a second storage region within the storage region, (Column 8 lines 6-26)

The Examiner notes that the system as taught by Micka receives a request from the host computer to copy tracks from the first (primary) area to the second (secondary) area. The request indicates which tracks are to be copied in the operation. Accordingly, the request correlates the operation between the primary and secondary areas by indicating which tracks are to be copied.

- allows in response to a read instruction to read data in the second storage region copying of the data from the first storage region to the second storage region, (Column 8 lines 31-34)
- allows in response to a write instruction to the second storage region writing of data instructed in the write instruction to the second storage region, (Column 8 lines 9-15).

- and controls copying the data written in the second storage region to the first storage region. (Column 8 lines 39-47).

As per dependent claim 13, Micka teach, wherein, when controlling the copying of the data in response to the read instruction, the control unit reads the data from the first storage region, outputs the data read to the computer, and then writes the data read in the second storage region. (Column 8 lines 22-26). *The Examiner notes that the controller generates a message indicating the tracks that are involved in the copy operation. This generation of the message occurs after receiving the initial request to copy data but before the data is actually copied as is claimed instantly.*

As per dependent claim 14, Micka teach, wherein the control unit controls the copying of the data written in the first storage region in response to a second command. (Column 8 lines 39-47).

As per dependent claim 15, Micka teach, wherein the control unit controls in response to the first command copying of data of the first storage region to the second storage region designated by the write instruction before writing the data designated by the write instruction. (Column 8 lines 9-13).

As per dependent claim 16, Micka teach, wherein, when there is data copied from the first storage region to the second storage region, the control unit controls in response to the first command to invalidate the data copied. (Column 8 lines 41-47).

As per dependent claim 17, Micka teach, wherein the control unit is responsive to a third command to control dissolving of the correlation between the first storage region and the second storage region. (Column 6 lines 25-28). *The Examiner notes that as*

discussed supra, the third command indicates which extents are to be copied over.

Once the extents are copied over, the data bits are turned from “on” to “off”.

Accordingly, this turning of the bits from “on” to “off” is dissolving the correlation between the first and second storage region.

As per dependent claim 18, Micka teach, wherein the control unit generates in response to the first command management information to manage correlation between the first storage region and the second storage region, and dissolves in response to the third command the management information. (Column 6 lines 25-28).

As per independent claim 19, Micka teach,

- a storage region; (Column 4 lines 5-26) (also see Figure 1)
- and a control unit that controls transfer between a first control state that correlates a first storage region within the storage region to a second storage region within the storage region (Column 8 lines 6-26) *The Examiner notes that the system as taught by Micka receives a request from the host computer to copy tracks from the first (primary) area to the second (secondary) area. The request indicates which tracks are to be copied in the operation. Accordingly, the request correlates the operation between the primary and secondary areas by indicating which tracks are to be copied.*
- and allows in response to a read instruction to read data in the second storage region copying of the data from the first storage region to the second storage region (Column 8 lines 31-34)

- o and a second control state that dissolves the correlation between the first storage region and the second storage region. (Column 8 lines 41-47).

As per dependent claim 20, Micka teach, wherein, when controlling the copying of data, the control unit reads data from the first storage region, outputs the data read to a host computer, and then writes the data read to the second storage region. (Column 8 lines 22-26). *The Examiner notes that the controller generates a message indicating the tracks that are involved in the copy operation. This generation of the message occurs after receiving the initial request to copy data but before the data is actually copied as is claimed instantly.*

As per dependent claim 21, Micka teach, wherein the control unit controls, in the first control state, in response to a write instruction to the second storage region, to allow copying of data from the first storage region to the second storage region. (Column 8 lines 31-34).

As per dependent claim 22, Micka teach, wherein, when transferring from the first control state to the second control state, the control unit controls copying of data from the first storage region to a region in the second storage region where data is not copied from the first storage region. (Column 6 lines 25-28). *The Examiner notes that Micka teach the practice of marking data extents that are to be copied with a binary one or set to "on". When the copying of the data takes place, only the data that is marked with a binary one or set to "on" is copied over. Accordingly, data marked as not "on" within the data being copied over from the first region to the second region is not copied over.*

As per dependent claim 23, Micka teach, wherein, when transferring from the first control state to the second control state, the control unit controls copying of data from the second storage region to a region in the first storage region where data is not copied from the second storage region. (Column 6 lines 25-28). *The Examiner notes that Micka teach the practice of marking data extents that are to be copied with a binary one or set to “on”. When the copying of the data takes place, only the data that is marked with a binary one or set to “on” is copied over. Accordingly, data marked as not “on” within the data being copied over from the first region to the second region is not copied over.*

As per dependent claim 24, Micka teach, wherein, when transferring from the first control state to the second control state, the control unit generates management information to manage correlation between the first storage region and the second storage region, and when transferring from the second control state to the first control state, the control unit releases the management information. (Column 6 lines 25-28).

As per independent claim 25, Micka teach,

- o in response to a first command from a computer, correlating a first storage region in the storage region to a second storage region in the storage region, (Column 8 lines 6-26) *The Examiner notes that the system as taught by Micka receives a request from the host computer to copy tracks from the first (primary) area to the second (secondary) area. The request indicates which tracks are to be copied in the operation. Accordingly, the*

request correlates the operation between the primary and secondary areas by indicating which tracks are to be copied.

- and copying data from the first storage region to the second storage region in response to a read instruction from the computer to read the data in the second storage region; (Column 8 lines 31-34)
- and in response to a second command, dissolving the correlation between the first storage region and the second storage region. (Column 8 lines 41-47).

As per dependent claim 26, Micka teach, wherein the step of copying the data comprises the steps of reading data from the first storage region, outputting the data read to the computer, and then writing the data read to the second storage region. (Column 8 lines 22-26). *The Examiner notes that the controller generates a message indicating the tracks that are involved in the copy operation. This generation of the message occurs after receiving the initial request to copy data but before the data is actually copied as is claimed instantly.*

As per dependent claim 27, Micka teach, wherein, when there is data copied from the first storage region to the second storage region, the data is invalidated in response to the first command. (Column 8 lines 41-47).

As per dependent claim 28, Micka teach, wherein, in response to a write instruction to the second storage region, data is copied from the first storage region to the second storage region. (Column 8 lines 9-13).

As per dependent claim 29, Micka teach, wherein data designated by the write instruction is written on the data copied to the second storage region. (Column 8 lines 9-15).

As per dependent claim 30, Micka teach, wherein in response to the second command, the data designated by the write instruction and written in the second storage region is copied to the first storage region. (Column 8 lines 39-47).

As per dependent claim 31, Micka teach, wherein, in response to the second command, the data is copied from the first storage region to a region in the second storage region where data is not copied from the first storage region. (Column 6 lines 25-28). *The Examiner notes that Micka teach the practice of marking data extents that are to be copied with a binary one or set to “on”. When the copying of the data takes place, only the data that is marked with a binary one or set to “on” is copied over. Accordingly, data marked as not “on” within the data being copied over from the first region to the second region is not copied over.*

As per dependent claim 32, Micka teach, wherein, in response to the second command, the data is copied from the first storage region to a region in the second storage region where data is not copied from the first storage region. (Column 6 lines 25-28). *The Examiner notes that Micka teach the practice of marking data extents that are to be copied with a binary one or set to “on”. When the copying of the data takes place, only the data that is marked with a binary one or set to “on” is copied over. Accordingly, data marked as not “on” within the data being copied over from the first region to the second region is not copied over.*

As per dependent claim 33, Micka teach, wherein management information to manage correlation between the first storage region and the second storage region is generated in response to the first command, and the management information is released in response to the second command. (Column 6 lines 25-28).

As per dependent claim 34, Micka teach, wherein the control unit copies data from the first storage region to a region of the second storage region where data is not copied from the first storage region and dissolves the correlation between the first storage region and the second storage region in response to a third command. (Column 6 lines 25-28).

As per dependent claim 35, Micka teach, further comprising the step of responding to the second command and the third command selectively issued from the computer. (Column 6 lines 25-28).

As per independent claim 36, Micka teach,

- correlating a first storage region within the storage region to a second storage region within the storage region; (Column 8 lines 6-26) *The Examiner notes that the system as taught by Micka receives a request from the host computer to copy tracks from the first (primary) area to the second (secondary) area. The request indicates which tracks are to be copied in the operation. Accordingly, the request correlates the operation between the primary and secondary areas by indicating which tracks are to be copied.*

- in response to a read instruction from a computer to read data in the second storage region, copying the data from the first storage region to the second storage region; (Column 8 lines 31-34)
- in response to a write instruction from the computer to the second storage region, writing data instructed in the write instruction to the second storage region; (Column 8 lines 9-15).
- and copying the data written in the second storage region to the first storage region. (Column 8 lines 39-47).

As per dependent claim 37, Micka teach, wherein the step of copying the data comprises the steps of: reading the data from the first storage region, outputting the data read to the computer, and then writing the data read in the second storage region. (Column 8 lines 22-26). *The Examiner notes that the controller generates a message indicating the tracks that are involved in the copy operation. This generation of the message occurs after receiving the initial request to copy data but before the data is actually copied as is claimed instantly.*

As per dependent claim 38, Micka teach, wherein the step of copying the data written to the first storage region is executed in response to a command from the computer. (Column 8 lines 6-26).

As per dependent claim 39, Micka teach, wherein, before writing the data designated by the write instruction, data of the first storage region is copied to the second storage region designated by the write instruction (Column 8 lines 31-34).

As per dependent claim 40, Micka teach, further comprising the step of controlling, in response to a command from the computer, when there is data copied from the first storage region to the second storage region, to invalidate the data. (Column 8 lines 41-47).

As per dependent claim 41, Micka teach, wherein the correlation between the first storage region and the second storage region is dissolved in response to a command from the computer. (Column 8 lines 41-47).

As per dependent claim 42, Micka teach, wherein the step of correlating the first storage region to the second storage region includes the step of generating management information to manage correlation between the first storage region and the second storage region, wherein the management information is released in response to the command. (Column 6 lines 25-28).

As per dependent claim 43, Micka teach,

- controlling transfer between a first control state in which a first storage region within the storage region is correlated to a second storage region within the storage region (Column 8 lines 6-26) *The Examiner notes that the system as taught by Micka receives a request from the host computer to copy tracks from the first (primary) area to the second (secondary) area. The request indicates which tracks are to be copied in the operation. Accordingly, the request correlates the operation between the primary and secondary areas by indicating which tracks are to be copied.*

- and a second control state in which the correlation between the first storage region and the second storage region is dissolved; (Column 8 lines 41-47).
- and in the first control state, in response to a read instruction to read data in the second storage region, copying the data from the first storage region to the second storage region. (Column 8 lines 31-34)

As per dependent claim 44, Micka teach, wherein the step of copying the data includes the steps of reading the data from the first storage region, outputting the data read to a host computer, and then writing the data read to the second storage region. (Column 8 lines 22-26). *The Examiner notes that the controller generates a message indicating the tracks that are involved in the copy operation. This generation of the message occurs after receiving the initial request to copy data but before the data is actually copied as is claimed instantly.*

As per dependent claim 45, Micka teach, wherein, in the first control state, in response to a write instruction to the second storage region, data is copied from the first storage region to the second storage region. (Column 8 lines 9-13).

As per dependent claim 46, Micka teach, wherein, when transferring from the first control state to the second control state, data is copied from the first storage region to a region in the second storage region where data is not copied from the first storage region. (Column 6 lines 25-28). *The Examiner notes that Micka teach the practice of marking data extents that are to be copied with a binary one or set to "on". When the copying of the data takes place, only the data that is marked with a binary one or set to*

“on” is copied over. Accordingly, data marked as not “on” within the data being copied over from the first region to the second region is not copied over.

As per dependent claim 47, Micka teach, wherein, when transferring from the first control state to the second control state, data is copied from the second storage region to a region in the first storage region where data is not copied from the second storage region. (Column 6 lines 25-28). *The Examiner notes that Micka teach the practice of marking data extents that are to be copied with a binary one or set to “on”. When the copying of the data takes place, only the data that is marked with a binary one or set to “on” is copied over. Accordingly, data marked as not “on” within the data being copied over from the first region to the second region is not copied over.*

As per dependent claim 48, Micka teach,

- wherein, when transferring from the first control state to the second control state, management information to manage correlation between the first storage region and the second storage region is generated, (Column 6 lines 25-28).
- and when transferring from the second control state to the first control state, the management information is released. (Column 6 lines 25-28).

As per independent claim 49, Micka teach,

- wherein a first storage region within the storage region and a second storage region within the storage region are correlated and controlled in a first state, (Column 8 lines 6-26) *The Examiner notes that the system as taught by Micka receives a request from the host computer to copy tracks*

from the first (primary) area to the second (secondary) area. The request indicates which tracks are to be copied in the operation. Accordingly, the request correlates the operation between the primary and secondary areas by indicating which tracks are to be copied.

- and the first storage region and the second storage region are controlled with the correlation therebetween being dissolved in a second state;
(Column 8 lines 6-26)
- and a control unit that selectively executes a first control mode which dissolves the correlation in order to transfer from the first state to the second state , (Column 8 lines 6-26)
- and a second control mode which dissolves the correlation after copying data in the first storage region to the second storage region. (Column 6 lines 25-28).

As per independent claim 50, Micka teach,

- wherein a first storage region within the storage region and a second storage region within the storage region are correlated and controlled in a first state, (Column 8 lines 6-26) *The Examiner notes that the system as taught by Micka receives a request from the host computer to copy tracks from the first (primary) area to the second (secondary) area. The request indicates which tracks are to be copied in the operation. Accordingly, the request correlates the operation between the primary and secondary areas by indicating which tracks are to be copied.*

- and the first storage region and the second storage region are controlled with the correlation therebetween being dissolved in a second state; (Column 8 lines 6-26)
- and a control unit that selectively executes a first control mode which dissolves the correlation in order to transfer from the first state to the second state (Column 8 lines 6-26)
- and a second control mode which dissolves the correlation after copying data in the second storage region to the first storage region. (Column 6 lines 25-28).

As per independent claim 51, Micka teach,

- a storage region; (Column 4 lines 5-26) (also see Figure 1)
- a memory storing management information; and a control unit that commonly uses the management information stored in the memory as control information for managing correlation between a first storage region within the storage region and a second storage region within the storage region, (Column 8 lines 6-26) *The Examiner notes that the system as taught by Micka receives a request from the host computer to copy tracks from the first (primary) area to the second (secondary) area. The request indicates which tracks are to be copied in the operation. Accordingly, the request correlates the operation between the primary and secondary areas by indicating which tracks are to be copied.*

- and as control information for managing correlation of a data status resulting from accesses to data in the first storage region with a data status resulting from accesses to data in the second storage region, and manages the first storage region and the second storage region that store the data. (Column 8 lines 6-26)

As per independent claim 52, Micka teach,

- controlling primary and secondary volumes as a pair; (Column 4 lines 5-26) (also see Figure 1)
- and using a logical snapshot management table that indicates which one of the primary and secondary volumes data to be accessed is retained to thereby access to a logical frozen image. (Column 6 lines 25-28).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. U.S. Patent No. 5,819,310 Vishlitzky et al. teach reading data from logical volumes on physical disk drives.
2. U.S. Patent No. 5,987,566 Vishlitzky et al. teach a mirroring system that allows retrieval of logical volumes from physical disk drives.
3. U.S. Patent No. 6,052,797 Ofek et al. teach a counting system used for recovery in conjunction with a remotely mirrored data storage system.

4. U.S. Patent No. 6,108,748 Ofek et al. teach a system and method for the mirroring of data to a target storage device that does not effect operations on the donor storage device.

5. U.S. Patent No. 6,351,792 Milillo, Michael S. teaches a method and system for copying and mirroring specific data extents in a data storage system.

6. U.S. Patent No. 6,370,626 Gagne et al. teach multiple access from multiple processors to a data storage set.

7. U.S. Patent No. 6,408,366 Lorenz et al. teach a method for monitoring the status of a hardware device, specifically memories.

8. U.S. Patent No. 6,408,369 Garrett et al. teach a system with a storage controller that allows for internal storage copies.

9. U.S. Patent Application Publication No. 2002/0103980 Crockett et al. teach a method for discarding certain data in a mirrored storage system.

10. U.S. Patent Application Publication No. 2002/0188815 Wang et al. teach a method and system for mirroring memory.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew Bradley whose telephone number is (571) 272-8575. The examiner can normally be reached on 6:30-3:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald A. Sparks can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MB
CPC/mb



CHRISTIAN CHACE
PRIMARY EXAMINER